

What is claimed is:

1 1. A method for operating a router, comprising:

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3 establishing a first VLAN from a port connected to a shared network to a plurality of
4 user ports, the first VLAN receiving packets from the shared network and transferring them
5 to a designated user port, the first VLAN unable to receive packets from a user port;

6

7 establishing a second VLAN from the plurality of user ports, the second VLAN
8 receiving packets from the user ports and transferring them to the port connected to the
9 shared network, the second VLAN unable to transfer packets to other user ports, and the
10 second VLAN unable to receive packets from the shared network, in order to separate packet
11 traffic of different users.

1 2. The method as in claim 1, further comprising:

2 dividing the plurality of user ports into groups of user ports, each group of user ports
3 assigned to a single designated user; and

4 establishing a third VLAN from the plurality of user ports, the third VLAN receiving
5 packets from the user ports and transferring them to the port connected to the shared network,
6 the third VLAN able to transfer packets to other ports belonging to a first group of user ports,
7 the third VLAN unable to transfer packets to other ports belonging to a group different from
8 the first group of user ports, the third VLAN unable to receive packets from the shared
9 network.

1 3. A router, comprising:

2 means for establishing a first VLAN from a port connected to a shared network to a
3 plurality of user ports, the first VLAN receiving packets from the shared network and
4 transferring them to a designated user port, the first VLAN unable to receive packets from a
5 user port;

6

7 means for establishing a second VLAN from the plurality of user ports, the second
8 VLAN receiving packets from the user ports and transferring them to the port connected to
9 the shared network, the second VLAN unable to transfer packets to other user ports, and the
10 second VLAN unable to receive packets from the shared network, in order to separate packet
11 traffic of different users.

1 4. The router as in claim 3, further comprising:
2 means for dividing the plurality of user ports into groups of user ports, each group of
3 user ports assigned to a single designated user; and
4 means for establishing a third VLAN from the plurality of user ports, the third VLAN
5 receiving packets from the user ports and transferring them to the port connected to the
6 shared network, the third VLAN able to transfer packets to other ports belonging to a first
7 group of user ports, the third VLAN unable to transfer packets to other ports belonging to a
8 group different from the first group of user ports, the third VLAN unable to receive packets
9 from the shared network.

1 5. A router, comprising:
2
3 a port connected to a shared network;
4 a plurality of user ports;
5
6 a first VLAN from the port connected to a shared network to the plurality of user
7 ports, the first VLAN receiving packets from the shared network and transferring them to a
8 designated user port, the first VLAN unable to receive packets from a user port;
9
10 a second VLAN from the plurality of user ports, the second VLAN receiving packets
11 from the user ports and transferring them to the port connected to the shared network, the

12 second VLAN unable to transfer packets to other user ports, and the second VLAN unable to
13 receive packets from the shared network, in order to separate packet traffic of different users.

1 6. The router as in claim 5, further comprising:

2 a third VLAN from the plurality of user ports, the plurality of user ports divided into
3 groups of user ports and each group of user ports assigned to a single designated user, the
4 third VLAN receiving packets from the user ports and transferring them to the port connected
5 to the shared network, the third VLAN able to transfer packets to other ports belonging to a
6 first group of user ports, the third VLAN unable to transfer packets to other ports belonging
7 to a group different from the first group of user ports, the third VLAN unable to receive
8 packets from the shared network.

1 7. A router, comprising:

2 one or more promiscuous ports;

3 one or more isolated ports;

4 one or more community ports;

5 a primary VLAN, the primary VLAN to receive packets from outside of the router
6 through the one or more promiscuous ports and to transfer the packets to a selected one of the
7 one or more isolated ports and to transfer the packets to the one or more community ports,
8 the primary VLAN unable to receive packets from the one or more isolated ports and unable
9 to receive packets from the one or more community ports;

10 an isolated VLAN, the isolated VLAN to receive packets from outside of the router
11 through an isolated port and to transfer the packets to the one or more promiscuous ports, the
12 isolated VLAN unable to transfer the packets to another isolated port and the isolated VLAN
13 unable to transfer the packets to a community port, and the isolated VLAN unable to receive
14 packets from a one or more promiscuous ports; and

15 a community VLAN, the community VLAN to receive packets from outside of the
16 router at a community port and to transfer the packets to a promiscuous port and to transfer
17 the packets to other community ports, the community VLAN unable to transfer packets to a
18 one or more isolated ports, the community VLAN unable to receive packets from the one or
19 more promiscuous ports.

1 8. The router as in claim 7, further comprising:

2 a promiscuous port of the one or more promiscuous ports connected to a shared
3 network, the shared network carrying packet traffic of a first user and packet traffic of a
4 second user; and

5 a first isolated port of the one or more isolated ports connected to a local area network
6 (LAN) assigned to the first user, and a second isolated port of the one or more isolated ports
7 connected to a LAN assigned to the second user, in order to separate packet traffic of the first
8 user and the second user.

1 9. The router as in claim 7, further comprising:

2 a plurality of sets of community ports; and
3 a community VLAN for each set of community ports, a VLAN for a designated set of
4 community ports unable to transfer packets to another set of community ports.

1 10. The router as in claim 7, further comprising:

2 a promiscuous port of the one or more promiscuous ports connected to a shared
3 network, the shared network carrying packet traffic of a first user and packet traffic of a
4 second user; and

5 a first set of community ports of the one or more community ports connected to a
6 local area network (LAN) assigned to the first user, and a second set of community ports of
7 the one or more community ports connected to a LAN assigned to the second user, in order to
8 separate packet traffic of the first user and the second user.

1 11. A router, comprising:
2 one or more promiscuous ports;
3 one or more isolated ports;
4 a primary VLAN, the primary VLAN to receive packets from outside of the router
5 through the one or more promiscuous ports and to transfer the packets to a selected one of the
6 one or more isolated ports, the primary VLAN unable to receive packets from the one or
7 more isolated ports; and
8 an isolated VLAN, the isolated VLAN to receive packets from outside of the router
9 through an isolated port and to transfer the packets to the one or more promiscuous ports, the
10 isolated VLAN unable to transfer the packets to another isolated port, and the isolated VLAN
11 unable to receive packets from the one or more promiscuous ports.

1 12. A router, comprising:
2 one or more promiscuous ports;
3 one or more community ports;
4 a primary VLAN, the primary VLAN to receive packets from outside of the router
5 through the one or more promiscuous ports and to transfer the packets to the one or more
6 community ports, the primary VLAN unable to receive packets from the one or more
7 community ports; and
8 a community VLAN, the community VLAN to receive packets from outside the
9 router at a community port and to transfer the packets to a promiscuous port and to transfer

10 the packets to other community ports, the community VLAN unable to receive packets from
11 the one or more promiscuous ports.

1 13. A router, comprising:
2 one or more promiscuous ports;
3 one or more other ports;
4 a primary VLAN, the primary VLAN to receive packets from outside of the router
5 through the one or more promiscuous ports and to transfer the packets to a selected one of the
6 one or more other ports, the primary VLAN unable to receive packets from the one or more
7 other ports; and
8 a second VLAN, the second VLAN to receive packets from outside the router at a one
9 or more other ports and to transfer the packets to a promiscuous port, the second VLAN
10 unable to receive packets from the one or more promiscuous ports.

1 14. A router as in claim 13, further comprising:
2 said second VLAN to transfer the packets to the one or more other ports.

1 15. A router, comprising:
2 one or more promiscuous ports;
3 one or more other ports;
4 a primary VLAN, the primary VLAN to receive packets from outside of the router
5 through the one or more promiscuous ports and to transfer the packets to the one or more
6 other ports, the primary VLAN unable to receive packets from the one or more other ports;
7 and
8 a second VLAN, the second VLAN to receive packets from outside the router at a one
9 or more other ports and to transfer the packets to a promiscuous port, the second VLAN
10 unable to receive packets from the one or more promiscuous ports.

1 16. A router as in claim 15, further comprising:
2 the one or more other ports is an isolated port.

1 17. A router as in claim 15, further comprising:
2 the one or more other ports is a community port.

1 18. A method for using a router, comprising:
2 establishing one or more promiscuous ports;
3 establishing one or more isolated ports;
4 establishing one or more community ports;
5 receiving a packets by a primary VLAN, the primary VLAN receiving the packets
6 from outside of the router through the one or more promiscuous ports and transferring the
7 packets to a selected one of the one or more isolated ports and transferring the packets to the
8 one or more community ports, the primary VLAN unable to receive packets from the one or
9 more isolated ports and unable to receive packets from the one or more community ports;
10 receiving a packets by an isolated VLAN, the isolated VLAN receiving the packets
11 from outside of the router through an isolated port and transferring the packets to the one or
12 more promiscuous ports, the isolated VLAN unable to transfer the packets to another isolated
13 port and the isolated VLAN unable to transfer the packets to a community port, and the
14 isolated VLAN unable to receive packets from a one or more promiscuous ports; and
15 receiving a packets by a community VLAN, the community VLAN receiving packets
16 from outside of the router at a community port and transferring the packets to a promiscuous
17 port and transferring the packets to other community ports, the community VLAN unable to
18 transfer packets to a one or more isolated ports, and the community VLAN unable to receive
19 packets from the one or more promiscuous ports.

1 19. The method of claim 18, further comprising:

2 connecting a promiscuous port of the one or more promiscuous ports to a shared
3 network, the shared network carrying packet traffic of a first user and packet traffic of a
4 second user; and

5 connecting a first isolated port of the one or more isolated ports to a local area
6 network (LAN) assigned to the first user, and connecting a second isolated port of the one or
7 more isolated ports to a LAN assigned to the second user, in order to separate packet traffic
8 of the first user and the second user.

1 20. The method of claim 18, further comprising:

2 establishing a plurality of sets of community ports; and

3 connecting a community VLAN for each set of community ports, a VLAN for a
4 designated set of community ports unable to transfer packets to another set of community
5 ports.

1 21. The method of claim 18, further comprising:

2 connecting a promiscuous port of the one or more promiscuous ports to a shared
3 network, the shared network carrying packet traffic of a first user and packet traffic of a
4 second user; and

5 connecting a first set of community ports of the one or more community ports to a
6 local area network (LAN) assigned to the first user, and connecting a second set of
7 community ports of the one or more community ports connected to a LAN assigned to the
8 second user, in order to separate packet traffic of the first user and the second user.

1 22. A method for using a router, comprising:
2 establishing one or more promiscuous ports;
3 establishing one or more isolated ports;
4 receiving a packets by a primary VLAN, the primary VLAN receiving packets from
5 outside of the router through the one or more promiscuous ports and transferring the packets
6 to a selected one of the one or more isolated ports, the primary VLAN unable to receive
7 packets from the one or more isolated ports; and
8 receiving a packets by an isolated VLAN, the isolated VLAN receiving packets from
9 outside of the router through an isolated port and transferring the packets to the one or more
10 promiscuous ports, the isolated VLAN unable to transfer the packets to another isolated port,
11 and the isolated VLAN unable to receive packets from the one or more promiscuous ports.

1 23. A method for using a router, comprising:
2 establishing one or more promiscuous ports;
3 establishing one or more community ports;
4 receiving a packets by a primary VLAN, the primary VLAN receiving packets from
5 outside of the router through the one or more promiscuous ports and transferring the packets
6 to the one or more community ports, the primary VLAN unable to receive packets from the
7 one or more community ports; and
8 receiving a packets by a community VLAN, the community VLAN receiving packets
9 from outside the router at a community port and transferring the packets to a promiscuous
10 port and transferring the packets to other community ports, the community VLAN unable to
11 receive packets from the one or more promiscuous ports.

1 24. A method for using a router, comprising:
2 establishing one or more promiscuous ports;
3 establishing one or more other ports;

4 receiving a packets by a primary VLAN, the primary VLAN receiving packets from
5 outside of the router through the one or more promiscuous ports and transferring the packets
6 to a selected one of the one or more other ports, the primary VLAN unable to receive packets
7 from the one or more other ports; and
8 receiving a packets by a second VLAN, the second VLAN receiving packets from
9 outside the router at a one or more other ports and transferring the packets to a promiscuous
10 port, the second VLAN unable to receive packets from the one or more promiscuous ports.

1 25. A method as in claim 24, further comprising:
2 transferring the packets by the second VLAN to the one or more other ports.

1 26. A method for using a router, comprising:
2 establishing one or more promiscuous ports;
3 establishing one or more other ports;
4 receiving a packets by a primary VLAN, the primary VLAN receiving packets from
5 outside of the router through the one or more promiscuous ports and transferring the packets
6 to the one or more other ports, the primary VLAN unable to receive packets from the one or
7 more other ports; and
8 receiving a packets by a second VLAN, the second VLAN receiving packets from
9 outside the router at a one or more other ports and transferring the packets to a promiscuous
10 port, the second VLAN unable to receive packets from the one or more promiscuous ports.

1 27. A method as in claim 26, further comprising:
2 establishing the one or more other ports as an isolated port.

1 28. A method as in claim 26, further comprising:
2 establishing the one or more other ports as a community port.

1 29. A router, comprising:

2 means for establishing one or more promiscuous ports;

3 means for establishing one or more isolated ports;

4 means for establishing one or more community ports;

5 means for receiving a packets by a primary VLAN, the primary VLAN receiving the

6 packets from outside of the router through the one or more promiscuous ports and

7 transferring the packets to a selected one of the one or more isolated ports and transferring

8 the packets to the one or more community ports, the primary VLAN unable to receive

9 packets from the one or more isolated ports and unable to receive packets from the one or

10 more community ports;

11 means for receiving a packets by an isolated VLAN, the isolated VLAN receiving the

12 packets from outside of the router through an isolated port and transferring the packets to the

13 one or more promiscuous ports, the isolated VLAN unable to transfer the packets to another

14 isolated port and the isolated VLAN unable to transfer the packets to a community port, and

15 the isolated VLAN unable to receive packets from a one or more promiscuous ports; and

16 means for receiving a packets by a community VLAN, the community VLAN

17 receiving packets from outside of the router at a community port and transferring the packets

18 to a promiscuous port and transferring the packets to other community ports, the community

19 VLAN unable to transfer packets to a one or more isolated ports, and the community VLAN

20 unable to receive packets from the one or more promiscuous ports.

1 30. A router as in claim 29 further comprising:

2 means for connecting a promiscuous port of the one or more promiscuous ports to a

3 shared network, the shared network carrying packet traffic of a first user and packet traffic of

4 a second user; and

5 means for connecting a first isolated port of the one or more isolated ports to a local
6 area network (LAN) assigned to the first user, and connecting a second isolated port of the
7 one or more isolated ports to a LAN assigned to the second user, in order to separate packet
8 traffic of the first user and the second user.

1 31. A router as in claim 29 further comprising:
2 means for establishing a plurality of sets of community ports; and
3 means for connecting a community VLAN for each set of community ports, a VLAN
4 for a designated set of community ports unable to transfer packets to another set of
5 community ports.

1 32. A router as in claim 29 further comprising:
2 means for connecting a promiscuous port of the one or more promiscuous ports to a
3 shared network, the shared network carrying packet traffic of a first user and packet traffic of
4 a second user; and
5 means for connecting a first set of community ports of the one or more community
6 ports to a local area network (LAN) assigned to the first user, and connecting a second set of
7 community ports of the one or more community ports connected to a LAN assigned to the
8 second user, in order to separate packet traffic of the first user and the second user.

1 33. A router, comprising:
2 means for establishing one or more promiscuous ports;
3 means for establishing one or more isolated ports;
4 means for receiving a packets by a primary VLAN, the primary VLAN receiving
5 packets from outside of the router through the one or more promiscuous ports and

6 transferring the packets to a selected one of the one or more isolated ports, the primary
7 VLAN unable to receive packets from the one or more isolated ports; and
8 means for receiving a packets by an isolated VLAN, the isolated VLAN receiving
9 packets from outside of the router through an isolated port and transferring the packets to the
10 one or more promiscuous ports, the isolated VLAN unable to transfer the packets to another
11 isolated port, and the isolated VLAN unable to receive packets from the one or more
12 promiscuous ports.

1 34. A router, comprising:
2 means for establishing one or more promiscuous ports;
3 means for establishing one or more community ports;
4 means for receiving a packets by a primary VLAN, the primary VLAN receiving
5 packets from outside of the router through the one or more promiscuous ports and
6 transferring the packets to the one or more community ports, the primary VLAN unable to
7 receive packets from the one or more community ports; and
8 means for receiving a packets by a community VLAN, the community VLAN
9 receiving packets from outside the router at a community port and transferring the packets to
10 a promiscuous port and transferring the packets to other community ports, the community
11 VLAN unable to receive packets from the one or more promiscuous ports.

1 35. A router, comprising:
2 means for establishing one or more promiscuous ports;
3 means for establishing one or more other ports;
4 means for receiving a packets by a primary VLAN, the primary VLAN receiving
5 packets from outside of the router through the one or more promiscuous ports and
6 transferring the packets to a selected one of the one or more other ports, the primary VLAN
7 unable to receive packets from the one or more other ports; and

8 means for receiving a packets by a second VLAN, the second VLAN receiving
9 packets from outside the router at a one or more other ports and transferring the packets to a
10 promiscuous port, the second VLAN unable to receive packets from the one or more
11 promiscuous ports.

1 36. A router as in claim 35, further comprising:
2 means for transferring the packets by the second VLAN to the one or more other
3 ports.

1 37. A router as in claim 35, further comprising:
2 means for establishing the one or more other ports as an isolated port.

1 38. A router as in claim 35, further comprising:
2 means for establishing the one or more other ports as a community port.

1 39. A router to separate packet traffic travelling on a shared network, comprising:
2 a primary VLAN within the router, the primary VLAN receiving packets from the
3 shared network through a promiscuous port and transferring the packets to a selected one of
4 a one or more isolated ports, the primary VLAN unable to receive packets from the one or
5 more isolated ports, a first local area network (LAN) of a first user connected to a first
6 isolated port of the one or more isolated ports, and a second LAN of a second user connected
7 to a second isolated port of the one or more isolated ports; and
8 a first isolated VLAN within the router, the first isolated VLAN receiving packets
9 through an isolated port connected to the first LAN and transferring the packets to the
10 promiscuous port, the first isolated VLAN unable to transfer the packets to another isolated

11 port, and the isolated VLAN unable to receive packets from the one or more promiscuous
12 ports; and

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14 a second isolated VLAN within the router, the second isolated VLAN receiving
15 packets through an isolated port connected to the second LAN and transferring the packets to
16 the promiscuous port, the first isolated VLAN unable to transfer the packets to another
17 isolated port, and the isolated VLAN unable to receive packets from the promiscuous port.

1 40. A method in a router for separating packet traffic travelling on a shared network,
2 comprising:

3 receiving a packets by a primary VLAN within the router, the primary VLAN
4 receiving packets from the shared network through a promiscuous port and transferring the
5 packets to a selected one of a one or more isolated ports, the primary VLAN unable to
6 receive packets from the one or more isolated ports, a first local area network (LAN) of a
7 first user connected to a first isolated port of the one or more isolated ports, and a second
8 LAN of a second user connected to a second isolated port of the one or more isolated ports;
9 and

10 receiving a packets by a first isolated VLAN within the router, the first isolated
11 VLAN receiving packets through an isolated port connected to the first LAN and transferring
12 the packets to the promiscuous port, the first isolated VLAN unable to transfer the packets to
13 another isolated port, and the isolated VLAN unable to receive packets from the one or more
14 promiscuous ports; and

15

16 receiving a packets by a second isolated VLAN within the router, the second isolated
17 VLAN receiving packets through an isolated port connected to the second LAN and
18 transferring the packets to the promiscuous port, the first isolated VLAN unable to transfer
19 the packets to another isolated port, and the isolated VLAN unable to receive packets from
20 the promiscuous port.

1 41. A router to separate packet traffic travelling on a shared network, comprising:

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3 means for receiving a packets by a primary VLAN within the router, the primary

4 VLAN receiving packets from the shared network through a promiscuous port and

5 transferring the packets to a selected one of a one or more isolated ports, the primary VLAN

6 unable to receive packets from the one or more isolated ports, a first local area network

7 (LAN) of a first user connected to a first isolated port of the one or more isolated ports, and a

8 second LAN of a second user connected to a second isolated port of the one or more isolated

9 ports; and

10 means for receiving a packets by a first isolated VLAN within the router, the first

11 isolated VLAN receiving packets through an isolated port connected to the first LAN and

12 transferring the packets to the promiscuous port, the first isolated VLAN unable to transfer

13 the packets to another isolated port, and the isolated VLAN unable to receive packets from

14 the one or more promiscuous ports; and

15

16 means for receiving a packets by a second isolated VLAN within the router, the

17 second isolated VLAN receiving packets through an isolated port connected to the second

18 LAN and transferring the packets to the promiscuous port, the first isolated VLAN unable to

19 transfer the packets to another isolated port, and the isolated VLAN unable to receive packets

20 from the promiscuous port.

1 42. A router to separate packet traffic travelling on a shared network, comprising:

2 a primary VLAN within the router, the primary VLAN receiving packets from the

3 shared network through a promiscuous port and transferring the packets to a selected one of

4 a one or more community ports, the primary VLAN unable to receive packets from the one

5 or more community ports, a first group of local area network (LAN) of a first user connected

6 to a first group of community ports of the one or more community ports, and a second group
7 of LANs of a second user connected to a second group of community ports of the one or
8 more community ports;

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10 a first community VLAN within the router, the first community VLAN receiving
11 packets through the first group of community ports connected to the first group of LANs and
12 transferring the packets to the promiscuous port, the first community VLAN unable to
13 transfer the packets to the second group of community ports, and the first community VLAN
14 unable to receive packets from the one or more promiscuous ports; and

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16 a second community VLAN within the router, the second community VLAN
17 receiving packets through the second group of community ports connected to the second
18 group of LANs and transferring the packets to the promiscuous port, the second community
19 VLAN unable to transfer the packets to the first group of community ports, and the second
20 community VLAN unable to receive packets from the promiscuous port.

1 43. A method for separating packet traffic travelling on a shared network, comprising:

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3 receiving packets from the shared network by a primary VLAN within the router, the
4 primary VLAN receiving packets from the shared network through a promiscuous port and
5 transferring the packets to a selected one of a one or more community ports, the primary
6 VLAN unable to receive packets from the one or more community ports, a first group of
7 local area network (LAN) of a first user connected to a first group of community ports of the
8 one or more community ports, and a second group of LANs of a second user connected to a
9 second group of community ports of the one or more community ports;

10

11 receiving packets from a first group of community ports by a first community VLAN
12 within the router, the first community VLAN receiving packets through the first group of

13 community ports connected to the first group of LANs and transferring the packets to the
14 promiscuous port, the first community VLAN unable to transfer the packets to the second
15 group of community ports, and the first community VLAN unable to receive packets from
16 the one or more promiscuous ports; and

17

18 receiving packets from a second group of community ports by a second community
19 VLAN within the router, the second community VLAN receiving packets through the second
20 group of community ports connected to the second group of LANs and transferring the
21 packets to the promiscuous port, the second community VLAN unable to transfer the packets
22 to the first group of community ports, and the second community VLAN unable to receive
23 packets from the promiscuous port.

1 44. A router to separate packet traffic travelling on a shared network, comprising:

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3 means for receiving packets from the shared network by a primary VLAN within the
4 router, the primary VLAN receiving packets from the shared network through a promiscuous
5 port and transferring the packets to a selected one of a one or more community ports, the
6 primary VLAN unable to receive packets from the one or more community ports, a first
7 group of local area network (LAN) of a first user connected to a first group of community
8 ports of the one or more community ports, and a second group of LANs of a second user
9 connected to a second group of community ports of the one or more community ports;

10

11 means for receiving packets from a first group of community ports by a first
12 community VLAN within the router, the first community VLAN receiving packets through
13 the first group of community ports connected to the first group of LANs and transferring the
14 packets to the promiscuous port, the first community VLAN unable to transfer the packets to
15 the second group of community ports, and the first community VLAN unable to receive
16 packets from the one or more promiscuous ports; and

17

18 means for receiving packets from a second group of community ports by a second
19 community VLAN within the router, the second community VLAN receiving packets
20 through the second group of community ports connected to the second group of LANs and
21 transferring the packets to the promiscuous port, the second community VLAN unable to
22 transfer the packets to the first group of community ports, and the second community VLAN
23 unable to receive packets from the promiscuous port.

1 45. A computer readable media, comprising:
2 said computer readable media having instructions written thereon for execution on a
3 processor for the practice of the method of claim 1, or claim 18, or claim 22, or claim 23, or
4 claim 24, or claim 40, or claim 43.

1 46. Electromagnetic signals propagating on a computer network, comprising:
2 said electromagnetic signals carrying instructions for execution on a processor for the
3 practice of the method of claim 1, or claim 18, or claim 22, or claim 23, or claim 24, or claim
4 40, or claim 43.